Narrows Pond Dam Reconstruction Project

Background

Narrows Creek is a tributary to Elk Lake located in the Centennial Valley of southwest Montana. Narrows Creek historically supported spawning runs of native Arctic grayling and Westslope cutthroat trout (WCT) from Elk Lake. Narrows Creek went dry approximately 0.6 miles upstream of Elk Lake in the late 1990's. Arctic grayling abundance in Elk Lake declined commensurate with flows in Narrows Creek until reproduction ceased completely and the species was extirpated. Restoration of self-sustaining Arctic Grayling and WCT populations to Elk Lake are management and recovery priorities for these sensitive species.

Purpose and Need

The Madison Ranger District and Montana Fish, Wildlife and Parks (MTFWP) implemented the Narrows Creek Flow Augmentation project from 2011-2013. This effort partially restored flows to lower Narrows Creek, but there is inadequate water in late summer and early fall to support fish reproduction. Critical late season flows are dependent on storage capacity of Narrows Pond Dam, a small impoundment about 0.5 miles upstream of Elk Lake on Narrows Creek. The earthen dam on Narrows Pond was breached several years ago and it no longer stores enough water to support downstream embryo development and fry emergence into early fall. The dam was historically about 2 feet higher in elevation and consequently impounded about twice as much water as it does currently.

Proposed Action

The Madison Ranger District and MTFWP propose to reconstruct the Narrows Pond Dam to modern specifications to increase stability, lower risk of future dam failure, and insure adequate water is impounded annually to support native species reproduction in downstream Narrows Creek. The Madison Ranger District contracted dam design in 2017. The new design, completed in 2018, increases dam height by approximately 4ft and would impound an additional 8 acre feet of water.

Dam construction would require excavation of the existing dam and construction of the engineered dam. The new structure would be comprised of rock and soil, but layered and compacted to state and federal standards. The design would incorporate a spillway channel to allow excess flows to overtop the dam in a controlled manner without jeopardizing the integrity of the dam. Onsite rock material from the Horse Creek and upper Elk Lake drainages would be used to armor the dam and spillway.

Equipment would access the site on an historic dam access road that is currently closed to motorized use. Equipment would include an excavator, back hoe and dump truck. The project would occur in late summer/early fall and would take several weeks to complete.

Wall Creek Fish Passage Barrier Project

Background

Native Westslope cutthroat trout (WCT) occupy less than 5% of their historical range in the Missouri River drainage. Current management of WCT designates populations that are 100% genetically unaltered as "core" populations and "conservation" populations as those that are between 90-99.9% genetically pure. These populations maintain genetic diversity, local adaptation, life history forms, and phenotypic variations of the species. These characteristics are often lost through hybridization with non-native trout species unless populations are protected from invasion.

Purpose and Need

The purpose of this project is to protect approximately six miles of habitat occupied by 95% genetically pure WCT in the Wall Creek drainage. This would be accomplished by constructing a fish passage barrier on USFS lands in the downstream end of the drainage, near the Forest Service boundary.

Proposed Action

Survey and design for the Wall Creek Fish Barrier was contracted by MTFWP and North Western Energy in 2016 for a location selected on National Forest, immediately upstream of the Kelly Ranch. The Madison Ranger District intends to oversee construction of this design in 2019 or 2020. The design was completed in June 2018. The barrier structure would be comprised primarily of concrete and earthen materials. The construction site would be accessed through the Kelly Ranch (private land access was secured by MTFWP in April 2018). Temporary motorized access from the Forest boundary to the construction site would be required. Construction would occur between July 15th and September 15th under dry ground conditions. The project is anticipated to take up to 3 weeks to complete. Minimal vegetation would be disturbed and the access trail and staging area would be rehabilitated and seeded upon demobilization.

The project would be accomplished with excavator, dump truck, cement truck and hand work. Motorized equipment would travel only where needed to complete project activities. Construction activities would occur when soils are dry to avoid compaction and rutting due to heavy equipment. All off-road construction equipment would be cleaned and inspected in accordance with Forest Plan direction regarding noxious weed control.